Digitized by the Internet Archive
in 2007 with funding from
Microsoft Corporation

http://www.archive.org/details/chumashcostanoan00kroerich

UNIVERSITY OF CALIFORNIA PUBLICATIONS
IN
AMERICAN ARCHAEOLOGY AND ETHNOLOGY

Vol. 9, No. 2, pp. 237-271 November 19, 1910

THE CHUMASH AND COSTANOAN LANGUAGES

BY

A. L. KROEBER

BERKELEY
THE UNIVERSITY PRESS

UNIVERSITY OF CALIFORNIA PUBLICATIONS

DEPARTMENT OF ANTHROPOLOGY

The following publications dealing with archaeological and ethnological subjects issued under the direction of the Department of Anthropology are sent in exchange for the publications of anthropological departments and museums, and for journals devoted to general anthropology or to archaeology and ethnology. They are for sale at the prices stated, which include postage or express charges. Exchanges should be directed to The Exchange Department, University Library, Berkeley, California, U. S. A. All orders and remittances should be addressed to the University Press.

		Price
Vol. 1.	1. Life and Culture of the Hupa, by Pliny Earle Goddard. Pp. 1-88; plates 1-30. September, 1903	$1.25
	2. Hupa Texts, by Pliny Earle Goddard. Pp. 89-368. March, 1904 ..... Index, pp. 369-378.	3.00
Vol. 2.	1. The Exploration of the Potter Creek Cave, by William J. Sinclair. Pp. 1-27; plates 1-14. April, 1904	.40
	2. The Languages of the Coast of California South of San Francisco, by A. L. Kroeber. Pp. 29-80, with a map. June, 1904	.60
	3. Types of Indian Culture in California, by A. L. Kroeber. Pp. 81-103. June, 1904	.25
	4. Basket Designs of the Indians of Northwestern California, by A. L. Kroeber. Pp. 105-164; plates 15-21. January, 1905	.75
	5. The Yokuts Language of South Central California, by A. L. Kroeber. Pp. 165-377. January, 1907 ..... Index, pp. 379-393.	2.25
Vol. 3.	The Morphology of the Hupa Language, by Pliny Earle Goddard. 344 pp. June, 1905	3.50
Vol. 4.	1. The Earliest Historical Relations between Mexico and Japan, from original documents preserved in Spain and Japan, by Zelia Nuttall. Pp. 1-47. April, 1906	.50
	2. Contribution to the Physical Anthropology of California, based on collections in the Department of Anthropology of the University of California, and in the U. S. National Museum, by Ales Hrdlicka. Pp. 49-64, with 5 tables; plates 1-10, and map. June, 1906	.75
	3. The Shoshonean Dialects of California, by A. L. Kroeber. Pp. 65-166. February, 1907	1.50
	4. Indian Myths from South Central California, by A. L. Kroeber. Pp. 167-250. May, 1907	.75
	5. The Washo Language of East Central California and Nevada, by A. L. Kroeber. Pp. 251-318. September, 1907	.75
	6. The Religion of the Indians of California, by A. L. Kroeber. Pp. 319-356. September, 1907 ..... Index, pp. 357-374.	.50
Vol. 5.	1. The Phonology of the Hupa Language; Part I, The Individual Sounds, by Pliny Earle Goddard. Pp. 1-20, plates 1-8. March, 1907	.35
	2. Navaho Myths, Prayers and Songs, with Texts and Translations, by Washington Matthews, edited by Pliny Earle Goddard. Pp. 21-63. September, 1907	.75
	3. Kato Texts, by Pliny Earle Goddard. Pp. 65-238, plate 9. December, 1909	2.50
	4. The Material Culture of the Klamath Lake and Modoc Indians of Northeastern California and Southern Oregon, by S. A. Barrett. Pp. 239-292, plates 10-25. June, 1910	.75
	5. The Chimariko Indians and Language, by Roland B. Dixon. Pp. 293-380. August, 1910 ..... Index, pp. 381-384.	1.00
Vol. 6.	1. The Ethno-Geography of the Pomo and Neighboring Indians, by Samuel Alfred Barrett. Pp. 1-332, maps 1-2. February, 1908	3.25
	2. The Geography and Dialects of the Miwok Indians, by Samuel Alfred Barrett. Pp. 333-368, map 3.	
	3. On the Evidence of the Occupation of Certain Regions by the Miwok Indians, by A. L. Kroeber. Pp. 369-380. Nos. 2 and 3 in one cover. February, 1908 ..... Index, pp. 381-400.	.50
Vol. 7.	1. The Emeryville Shellmound, by Max Uhle. Pp. 1-106, plates 1-12, with 38 text figures. June, 1907	1.25
	2. Recent Investigations bearing upon the Question of the Occurrence of Neocene Man in the Auriferous Gravels of California, by William J. Sinclair. Pp. 107-130, plates 13-14. February, 1908	.35
	3. Pomo Indian Basketry, by S. A. Barrett. Pp. 133-306, plates 15-30, 231 text figures. December, 1908	1.75
	4. Shellmounds of the San Francisco Bay Region, by N. C. Nelson. Pp. 309-356, plates 32-34. December, 1909	.50
	5. The Ellis Landing Shellmound, by N. C. Nelson. Pp. 357-426, plates 36-50. April, 1910 ..... Index, pp. 427-441.	.75

UNIVERSITY OF CALIFORNIA PUBLICATIONS
IN
AMERICAN ARCHAEOLOGY AND ETHNOLOGY

Vol. 9, No. 2, pp. 237-271 November 19, 1910

THE CHUMASH AND COSTANOAN LANGUAGES

BY

A. L. KROEBER.

CONTENTS.

PAGE

INTRODUCTION 237
COSTANOAN 239
Dialects and Territory 239
Comparative Vocabularies 242
Phonetics 249
Grammatical Notes 251
Texts 253
Relationship of Miwok and Costanoan 259
CHUMASH 264
Dialects and Territory 264
Comparative Vocabularies 265
Grammatical Notes 268
Texts 269

INTRODUCTION.

Many years ago Father Felipe Arroyo de la Cuesta composed, and Shea in 1861 published, one of the most satisfactory treatises dealing with an Indian idiom of California, the Grammar of the Mutsun Language, subsequently classified as a Costanoan dialect. Several years ago the author added notes on another dialect, that of Monterey, and presented a grammatical sketch of the Santa Ynez idiom of the Chumash family.[1]

[1] Languages of the Coast of California South of San Francisco, present series, II, 29-80, 1904.

Since that time he has recorded two vocabularies, one in the Costanoan speech at Mission San Jose, the other in the Chumash dialect of Mission San Buenaventura.

A comparison of these two new sources with the material previously obtained, enables an insight into the dialectic organization of the two families. Wherever these uniformly-made records of two dialects of the same stock corroborate each other, whether by agreement or by an explainable difference, they furnish a basis of comparison by which other previously published lists may be judged, and some allowance made for their orthographic variations. In this way some half dozen diverse vocabularies in each family are made available for comparative study.

COSTANOAN.

DIALECTS AND TERRITORY.

Seven Franciscan missions were founded in territory held by Indians of Costanoan speech: Soledad, San Carlos near Monterey, San Juan Bautista, Santa Cruz, Santa Clara near the present city of San Jose in Santa Clara county, San Jose near Irvington in Alameda county, and Dolores in San Francisco. To these were brought, before the close of the Mission period, probably all the Costanoan Indians then living.

Some record has been made of the prevailing language at each mission, which was normally the dialect of the immediate district. Seven forms of Costanoan speech are therefore known to have existed.

Unfortunately it seems impossible to learn anything as to such other dialects as there may have been, as to transitional idioms connecting the "standard" languages of the missions, or of the territorial extent of each form of speech. It is almost certain that the seven published vocabularies do not comprise all varieties of the Costanoan language. Father de la Cuesta's works refer to differences of speech between the Mutsunes and the Ansaymes or Ausaimas connected with mission San Juan Bautista, but furnish only two or three illustrations.[2] Nothing has been published regarding the dialects of northern Alameda or Contra Costa counties. Finally, while all ethnological maps have extended the Costanoan territory eastward to the San Joaquin river, the missions are all situated in the western half of this area, between the mountains and the sea. Not a Costanoan dialect, tribe, or even name is positively known from the territory between the main watershed of the Coast range and the San Joaquin river. It appears, indeed, that contrary to former supposition at least all of the plain of the San Joaquin valley, and possibly the lower hills on its west, were not in

[2] Compare his Vocabulary or Phrase Book of the Mutsun Language, ed. Shea, New York, 1862, examples 9 and 12.

Costanoan but in Yokuts territory.[3] This circumstance would account for the absolute dearth of references to Costanoan Indians in this area. Nevertheless there remain sufficiently extensive tracts which cannot well have been inhabited by any one but Costanoans, but in regard to which we are, and perhaps always will be, uninformed. Consequently the present classification may not be regarded as exhaustive; and it differs further, to its disadvantage, from such comparative studies as have been made of Yuki, Pomo, Miwok, Yokuts, and Shoshonean, in that it deals not with *areas* of speech, but with the speech of accidentally selected *points*. In the absence of fuller data, it is however necessary to operate with those available.

As is usual in California, none of the dialects seem to have had native names. Mutsun is properly only the name of the principal village near mission San Juan Bautista. Rumsen or Rumsien, used for the Costanoan Indians of Monterey, is probably also only a specific place name misused by the whites. The five "tribes" at San Francisco—Ahwastes, Olhones, Altahmos, Romonans, and Tulomos—are, if Costanoan, only rancherias. Polya, Polye, or Polaya, was given to Dr. Barrett and the author as the name of the language of San Jose mission; yet this seems to be nothing but Northeastern Miwok polaiya, ocean, and is therefore probably the term applied to the resident natives by the Miwok of the interior after their transportation to the mission.

The seven known Costanoan dialects are divisible into two groups, a northern and a southern. The northern division comprises San Francisco, San Jose, Santa Clara, and Santa Cruz, the southern San Juan Bautista, Soledad, and Monterey. The difference between the two groups may be accentuated by the fact that the four northern missions are all situated on the ocean or San Francisco bay, or within a few miles of the water; while two of the three southern locations are some distance inland. It is impossible to predict a priori whether such a topographical distinction will be reflected linguistically, in any given case, in California. Where the speech of entire areas has been ascertained, the following facts have developed. The

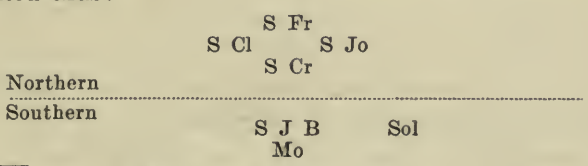
[3] Present series of publications, VI, 350, 375, 1908.

Yokuts and Miwok correspond absolutely, in their lines of dialectic cleavage, to the division into level plain and broken hill country.[4] The Maidu, however, in a similar situation, do not;[5] and similarly among the Pomo several dialects each comprise parts of two or three distinct topographical areas.[6]

In the northern division, the dialects of San Jose and Santa Clara are very closely related—so much so that in view of their being recorded many years apart by observers using different orthography, it cannot be stated with certainty whether or not there is any real difference between them. San Francisco is at least as similar to these two as is Santa Cruz. Santa Cruz, geographically the nearest of the northern dialects to San Juan Bautista, also resembles it most; but the primary line of division in the family nevertheless passes between the two, for Santa Cruz is more similar to Santa Clara than to San Juan, and this in turn has closer affinities with Soledad and Monterey.

In the southern division the abundance of material on San Juan as compared with the scant 22 words known from Soledad,[7] make comparison more difficult. It must be observed that the numerals given by de Mofras[8] as from Soledad belong evidently to a dialect of the San Juan type, if Hale's Soledad vocabulary represents the characteristic speech of that place. The Monterey dialect is peculiar. In its stems it agrees almost invariably with San Juan, as compared with the northern group; but many of its words are evidently reduced, especially in their latter parts. Dropping of vowels is responsible for a common accumulation of final consonants, a feature confined to this one dialect.

Graphically the affinity of the Costanoan dialects can be represented thus:



[4] Present series, II, 309, 1907; VI, 333, 1908.

[5] R. B. Dixon, Bull. Am. Mus. Nat. Hist., XVII, 125, 127, 1905.

[6] Present series, VI, 123, 1908.

[7] Gallatin, Hale's Indians, Tr. Am. Ethn. Soc., II, 125, 1848.

[8] II, 401.

COMPARATIVE VOCABULARIES.

The comparative Costanoan vocabulary which is appended is a collocation of previously published word lists with those secured by the author in the Monterey and San Jose dialects. The latter is corroborated by a brief vocabulary obtained by Dr. Barrett in Marin county. So far as could be judged, the orthographical peculiarities of each observer have been obliterated and all words given in uniform spelling; but only words represented in two or more dialects have been included.[9] C represents a sound akin to English sh; x is the surd fricative in k position; q is velar k; q', k', t', p' are surd stops produced with more than usual muscular energy and accompanied by a glottal stop; γ is a voiced fricative in k or q position; X is velar x; t· is a palatal t; ʟ, surd l, affricative; ö and ü indicate sounds similar to German ö and ü but with less rounding of the lips, and therefore less distinct quality.

[9] The following are the sources: Monterey, the author, supplemented by A. Taylor in the California Farmer, XIII, 66, April 20, 1860. Soledad, H. Hale, in Trans. Am. Ethn. Soc., II, 126, 1848. San Juan Bautista, de la Cuesta, *op. cit.* Santa Cruz, F. J. Comelias, in Taylor, *op. cit.*, XIII, 58, April 5, 1860, reprinted in Powers, Tribes of California, Contrib. N. A. Ethn., III, 538, 1877. Santa Clara, F. G. Mengarini, in Powers, *ibid.* San Jose, the author. San Francisco, in Schoolcraft, II, 494, republished in Powers, *ibid.*

English	*Monterey*	*Soledad*	*San Juan Bautista*	*Santa Cruz*	*Santa Clara*	*San Jose*	*San Francisco*
Person	ama	mue				muwe-kma	
Man	muk-iamk		t·are-s	teare-s	tare-c	t·are-s	
Woman	latc-iamk	curic-me	muk-ur-ma	kitege-ma	surik	aita-kis	ratitc-ma
Boy	cin-iemk		koteinsix, kotino-xnis	alacu		koteo	cen-is-muk
Girl	ats-yamk		atsia-xnis	muxac		atsya-kic	katra
Child			sini				okluckuc
Old man	ewic-om		mit·e-	xuhoknic[1]	xuntatc[1]	miti-c, huntatc	huntax[1]
Old woman	lesex-em		muk-ienin			ketinetc	
Father	apa[2]	nik-apa[3]	apa	apna-n	apa-m[4]	apa	apa
Mother	ana[2]	nik-ana[3]	ana-n	ana-n	anana-m	ana	ana
Head	ut·	teop	moxel	uri	taxa-c	mot·il	uli
Hair	ut·, t·ap	worox	uri	tapor[5]	uri	uri	uli
Forehead	uri		tima	tima	tima-tc	tima-x	
Ear	tuxs	oteo	oteo, tuxsus	etco	tukcuc	tuksus	tuksus
Eye	xin	hin	xin	hin	xin	hiny	-hin
Nose	us, wus	us	us	us	us	hus	us
Mouth	xai	hai	xai	weper[6]	weper-em[4]	weper[6]	weper[6]
Tongue	las		lase	lasa	lase-xem	lase	lase-k
Teeth	sit		sit	sit	süt-em	sit	sit
Beard	eis		eyes	eyes	eyek-em	heyek	
Neck	katck, xurks[7]		xorkos[7]	harkos[7]	ranai-em	ranai	lanai
Arm	is		xunyo-is	isu	isu	icu	isu
Hand	puts		isu	spalmic	talmes		
Nails	tur-s		tur-is	tur	tur-em	tur	tur
Body				wara	wara		wara
Chest			tukai				itek

English	*Monterey*	*Soledad*	*San Juan Bautista*	*Santa Cruz*	*Santa Clara*	*San Jose*	*San Francisco*
Belly	pitin		xutu	ramaina			
Knee	tol-s		tolo-s				
Leg				koro	koro-m		pomi
Foot	koro		koro	hatac	hata-m		kolo
Bone	tcatc		t·ati	tcaie	taxi-m	tayi	t·ai
Blood	patcan		patian	payan	payan-em	payan	payan
Heart	rutcusim		sire[8]	mini	mini-tc	minyi-x	mini
Liver	sire					sire	
Name	nepai		grakat	rakat	tucui		
Chief	tcic			wit·es			mitoc
Friend	ukx		mixu, miwik, oneya	onient	are-em		'atco
House	ruk		ruka	rua	ruwa-m	ruwai	riwa
Sweat-house			tupen			tupen	
Bow	lawan		lawan	liti	tanuka-m	conok	tanuka[9]
Arrow	tep-s		tios, tiox, t·cmox	tcemo	tawis-em	huti	tawis
Knife	t·ip		t·ipe	tcipi			tipa
Boat	konuñ (?)				walin		wali
Moccasin	xon-s			colok	otox-em		
Pipe	kunu-c			torexo	trepa-m	torepa	rucum
Tobacco	sawan-s		mat·er	matcer	materi	mat·cr	oya
Road	inix		inu				
Sky	tcarax			tcara	tarax		reneme[10]
Sun	icmen, tank[11]		ismen	icmen	icmen	hicmen	icmen
Moon			tcar	tcar	korme	korme	kolma
Star	pakeran			usi	uci		agwe, mutcmutcmis
Day	tux-s		t·uxi-s	tuxi-c	tuxi	tuxi	tuhc[9]

English	*Monterey*	*Soledad*	*San Juan Bautista*	*Santa Cruz*	*Santa Clara*	*San Jose*	*San Francisco*
Night	mur		mur-tei	mur-utc	mur	murut·	mur
Cloud	meitc					moto	
Wind	ter		xit·uk	tari-s	wasar, kana	t·uye	tuyare[9]
Thunder	tura[12]		t·ura	tcura	tarax[13]		tura[9]
Lightning			wilpe	wilep	wilka		wilka-warap
Rain	inam, inlam		amne	amani	amne	amne	anau
Snow			yopko (cf. ice)	wakani	wakan	wakan	put
Fire	coto		soto-n	yuelek	coto	hiyis	[14]
Smoke			kar			kar	
Ash	tcire		yoko-n			yoko? yuki?	
Water	si		si	si	si	si	si
Ice	yokom		wakna (cf. snow)	ukani	pusumakic		purtcu
Earth, world	tura, pire		mun, pire	pire	warep	warep	warep
Stream	watco-s			rumai	xume	rumei	oruc
Lake	tcapur			hoikol	tiprek		
Ocean	kalin			kalai	kale	muna	
Valley	t·urup			rum[15]	uraxax		patuk
Mountain	hut·			xuya	uya		huya, huak
Stone	irek		irek	eni	irek	irek	irek, ani
Salt	aks		akes	awes	awes	awec	
Wood, tree	tis		tapur		tapor, hop	tapor	
Leaf	is			tapac	maraxi		
Grass	pecili		xumes	wai	rorex, lapu, huni		yawa
Meat	tot·[16]		tot·e,[16] at·ese	ris	ric	ric	aric
Dog	mat·an, matcan			hitcas	tcutcu		puku
Coyote	tat·aki-matcan[17]		mayan, wawises[18]			mayan	maial[19]
Wolf	umux		umux	umu	umux		

English	*Monterey*	*Soledad*	*San Juan Bautista*	*Santa Cruz*	*Santa Clara*	*San Jose*	*San Francisco*
Bear	ores		ores	ores	oroc	ores	
Wild-cat	xom		toroma				
Deer	tat·aki-tot·[20]		tot·e	totc	"aluf"		tota[9]
Elk	tcerite			tibu	tiwu		
Jackrabbit	tceis		tceyes	tceyes		tceyec	
Rabbit	weren		weren	wiren		werin	
Ground squirrel	ex		ex			ex	
Skunk	tixsin		tixsin				
Bird			tcirit-min	winak[21]	cuklin		winak-mon
Buzzard	tutelun		t·uilun				
Hawk sp.	kakon		kaknu				
Goose	lalk		lalak	patc	cakan		
Crow	kakaru		kakari[22]				
Turtle	xunosxim		aunismin	auniemin	auniemen		auniemau
Frog	wakatsem		wakarat·min				
Rattlesnake	ipy		ipiwa	hintcirua	epiwa		
Snake sp.	lisan		lisana			licumca	
Fish	kinir		wixi	helai	oyo	hamui	
Salmon	urak		uraka	hurak	tcipal		tcirik
Fly	mumurux		mumuri	mumura	mumurix		momua
Louse	kax		kaxai				
Flea	por		por			por	
White	paxcla-st		palkas-, tcupkas-, tcalka	losk-min	nosko-min	locko-wis	laska-min
Black	karsi-st		mur-t·u,[23] xaska, humulus-	mur-tus-min[23]	mur-tuc-min[23]	cirke-wis	colko-tc
Red	yurtsi-st			patia-min[24]	utca-min	pulte-wis	tcitko-tc[25]
Large	lauwak, icak		weyero, matili-	ut·es	wetel	wetel	ani

English	*Monterey*	*Soledad*	*San Juan Bautista*	*Santa Cruz*	*Santa Clara*	*San Jose*	*San Francisco*
Small	pusut		sitlu-, kaslu-, witeu-	niuma	kucue-mini	kuteu-wis[26]	oteisteus
Good	misix		mis-i-, apsik	urcec-min	orcic-mini	horei	horca
Bad	yetc-eme-st			hutes-min	ekte-mini		ekte
Dead	laku-, aiyew			semo-eti	otone		hurwisa
I	ka		kan, ka	kan		kana, kanak	kana
Thou	me		men		mene	mene, meni	mene
He	wa		wak	waya	waka	waka, wakai	watee
We	mak		makse	makse-nt	maken	makin, makinmak	
Ye	makam, mamakam		makam		makam	makam	makam
They	waka		aisa	aiha		wakamak	
This	nepe, pina		ne-pe, ne-nis-	nepe	nepe		ne-kam-sa
That	nupi		nu-pi, nu-nis-, pina	hemit			
Here	ne, tea, teiya		ne, nia			nomo	
There	xu, xuya		nu			nuxu	
Who	amp		ate	atu	mato	mat·o	mato
What	inta		intsis, ista			hint·o	
Where	an		ani			mani	
All	imei		imiu, iru-		emen	hemen	kete
Much	exe		kese? wese?	yasir		irite	
Up	tapre[27]		rini			rini-mu	rene-me
Down	winum		winimui				
To-day	naya		naha	naxa	nesa		
Yesterday	wik		wika	wikan	wikani		
To-morrow	tearuai		aruta	munsa	ucic	hucic	usric
Yes	e		he, exe, xehe, hi, ixi	exe	exe	horce, he[28]	"heah"

English	*Monterey*	*Soledad*	*San Juan Bautista*	*Santa Cruz*	*Santa Clara*	*San Jose*	*San Francisco*
No	kue		ekwe	eka	elekic	akwe	akwi
One	imxala	himitsa	emetca, hemetca	impetc	emxem	himen	
Two	utis	utshe	ut·xin	uthin	utin	utsin	
Three	kapes	kapxa	kapxan	kaphan	kapan	kaphan	
Four	utitim	utcit	ut·it, karwas	katuac	katoac	katwac	
Five	hale-is[29]	parwac	parwe	micur	mucur	micur	
Six	hale-caken	imin-ukca	nakitci	saken	caken	saken	
Seven	utxomai-caken	ut-ukca	t·akitci	tupuituk	kenetc[30]		
Eight	hapxa-is-cak	taitemi	taitimin	usatis	osatis[30]		
Nine	pak	watso	paki	neuku	telektic[30]		
Ten	tantsa	matsoso	tansakte	icc	wec		
Eat	amxa-i		ama	ama-i	ama-i-	ama-i	amu-c
Drink	ukis			uit	weto-	uweto	owato
Run				urika-i	elektonke-i		
Dance	tcit		tcite, moho, runa	tcite	token-en	yica	irca
Sing	tcanoi		sawe	tcane			harwi
Sleep	et·n		et·en	etcen	etin-i	et·e	
Speak, talk	ritc, kai		ritca, ko	ayua	nonoenti	nonoante	-cirle
See	aiwi-, cak			hiriri	xima-i	hiti, kiti	-hima
Like	ius, muis		muis	hasan			
Kill	nimi		nimi	nimi	nimi	nimi	mimi(*sic*)
Sit	t·akar-ap			taurait	tcawa-i		
Stand	latsaia			korhonmi	itma-i		
Go (cf. come)	wati, ot·		ayona	wiko	wate-	wate-i	aieni
Come (cf. go)	ai		wate	wate	ayi		
Give	cum		ara, xumi			ara-i	

NOTES TO VOCABULARIES.

1. Old.

2. Compare Monterey ap-s, an-s, my f., my m., apa-n, ana-n, your f., your m., San Juan Bautista ap-sa, my f., with the apna-n and ana-n of Santa Cruz. These are the only suffixed pronominal elements yet found in the Costanoan languages, except for the affixes of the imperative.

3. The prefix or proclitic nik-, my, is unparalleled.

4. The ending -m, which appears repeatedly in the vocabulary of this dialect, is probably not pronominal.

5. Compare San Juan Bautista tapis, crown of head.

6. With we-per compare San Juan Bautista tut-per, lips.

7. Throat, swallower.

8. Also with the meaning of soul, spirit, person, in de la Cuesta, but liver in other dialects.

9. The original has p for t.

10. "Up."

11. "Heat of the sun."

12. Said to mean also earthquake. The initial is dental, not palatal t at Monterey.

13. = tura of other dialects, or an error for tarax, sky?

14. "Roretaon."

15. Compare stream.

16. The same as deer.

17. "Wild-dog, field-dog."

18. Either waguises = wawises, or waquises = wakises.

19. Given as wolf.

20. "Wild-deer, wild-meat."

21. Santa Clara wirak, wings.

22. Raven.

23. Compare night.

24. Compare blood.

25. Compare the Santa Clara word for green: tcitko-mini.

26. Compare boy.

27. "Above."

28. Literally, good.

29. "One-hand."

30. Coast Miwok kene, osa, teleka, one, two, three.

PHONETICS.

The exceptional habit of the Monterey dialect of shortening its words is the cause of its frequent accumulations of final consonants. Such accumulations are not tolerated by the other dialects, as a glance at the vocabularies reveals. In regard to initial consonants, Monterey agrees with the other dialects in possessing only simple sounds and affricatives like tc. As a group, therefore, the Costanoan languages are to be reckoned

with the majority of California linguistic families in that they allow only single consonants before, after, or between the vowels of stems.

The vocalic system of Costanoan is reducible to the five sounds u, o, a, e, i, of which both o and e, and u and i, are open in quality, though the latter perhaps also occur with close value.

The apparatus of consonants is also simple, consisting of the stops k, t·, t, p and the sounds n, m, h or x, s, c, r, l, w, y, and the affricative tc.

T· is very palatal, as in Yokuts and Salinan, and its frequent orthography tr conveys a fair idea of the quality of its sound. De la Cuesta has written it thr, also ths, th, and tsh. These spellings give to his material a much more forbidding and difficult look than the actual phonetic simplicity of the Costanoan dialects warrants.

The four stops have been almost randomly recorded by the author, both in San Jose and Monterey, as surd or partially sonant. The perceptible difference is so slight that it seems probable that there is only one series of essentially surd sounds, which differ sufficiently from the English surd stops, in being pronounced with somewhat less breath or some degree of sonancy —possibly during the explosion—to cause them at times to assume to English ears a quality approaching that of sonant stops. Father de la Cuesta seems to have mastered the phonetics of the San Juan dialect, but his nationality and orthography are unsatisfactory for elucidating this point, as the surd explosives of Spanish are voiced during part of their formation, while the corresponding Spanish sonants are largely fricative, so that if the Costanoan stops are actually intermediate rather than surd, he would nevertheless have naturally and correctly represented them by the Spanish surd stop characters.

H and x shade into one another and are probably one sound, as in Yurok and Yana and Yuki. C, more nearly than English sh, resembles s, as in so many other American languages. R is trilled with the tip of the tongue, but without violence.

Sound equivalences between such nearly related languages as the several Costanoan dialects can not be dwelt on with much emphasis in the present state of knowledge, as some dif-

ferences may be typographical rather than phonetic. A number are however apparent.

r = l: woman, hair, foot, moon, black, large. San Francisco particularly substitutes l for r, but not always.
r = n, y, t·: tobacco, wind, hair, meat.
l = n: coyote, white.
y = tc, t·, t: bone, blood, coyote, black.
s = k, h: beard, today.
k = x: head, ear.
k = w: house, salt, small.
Santa Clara -tc = San Jose -x = other dialects - —: forehead, heart.
c = tc = t: bow, thunder, small.

In San Jose, all the consonants occur initially, and all but tc finally. In consonant combinations in words, r, p, and tc have not been noted as second member. Further examples may eliminate these exceptions and reveal all the consonants as available for any position. All the vowels are found in every part of words.

GRAMMATICAL NOTES.

SAN JOSE.

The personal pronouns in the dialect of San Jose show full forms similar to those of San Juan Bautista and other dialects, as contrasted with the reduced ka, me, wa of Monterey. As in the other known dialects they occur in two forms; one for the absolute, subjective, and possessive, the other, produced by the addition of -c to the first syllable of the stem, for the objective. The objective of the third person ic or c, which presents the appearance of a formation by analogy, has no known parallel in the southern dialects.

	Subjective and Possessive	*Objective*
1 S	kana, kanak	kic
2 S	mene, meni	mec, mic
3 S	waka, wakai	ic, c
1 P	makin, makinmak	
2 P	makam	
3 P	wakamak	

The plural of animate nouns and pronouns is formed by the usual suffix -mak, -kma, -ma: tare-ma, men, aita-mak, women, muwe-kma, people, waka-mak, they, makin-mak, we.

An ending -c, as in tarc-c, man, miti-c, old man, is evidently the same as the Monterey and San Juan suffix of nouns -s. Compare aita-kic, woman, atsya-kic, girl. The -c and -kic of the words for man and woman are lost before the plural suffix.

The general Costanoan locative or inessive suffix -tka occurs: si-tka, in the water. Another locative ending is -mo, -mu, -m: no-mo, here; rini-mu ruwai, on the house, "above-on house"; mani-m watic, where are you going? Compare San Juan Bautista patre-me, at the house of the padre.

An adjective ending -wis corresponds to Monterey -st and San Juan, Santa Cruz, Santa Clara, and San Francisco -min or mini.

cirke-wis, black
locko-wis, white
pulte-wis, red
icne-wic, how is it?
kutcu-wic, small

The imperative ends in -i. Compare San Juan -ya, intransitive imperative, and -i, imperative with object of third person.

The future is indicated by -na, while -k seems to denote the past, and -c is perhaps a present: kiti-na, will see, kiti-k, saw or sees, wati-c, goes. Compare the Monterey preterite in -ki. Another ending is -kne, as in nimi-kne, struck.

SAN JUAN BAUTISTA.

The following are the grammatical elements of the Mutsun dialect, as given by de la Cuesta in Spanish orthography. They appear to constitute the entire grammatical apparatus of the language.

-mac, -cma, plural of nouns; -s-mac, plural noun agent
-se, -ne, -e, objective case-ending
-sum, -ium, -um, instrumental case-ending
-tca, -tac, locative case-ending, in, on, at
-me, case-ending, with, at the house of
-tsu, case-ending, in company with
-huas, case-ending, for, to
-tun, case-ending, from
-s, infixed near the end of verbs, plural of object or repetition of action
-s, preterite
-n, preterite, more remote

-scun, -cun, preterite, remote
-gte, preterite
-si, causative
-su, to go to
-na, to go to
-iñi, to come to
-miste, to beg to
-u, when
-inicane, when
-stap, -stapse, impersonal, passive, etc.
-gnis, impersonal, passive, etc.
-gne, the same, also participial
-guit, prohibition
-csi, excellently, well, thoroughly
-mu, reciprocal
-pu, reflexive
-ya,intransitive imperative
-i, imperative with object of third person
-t, -tit, -mit, imperative with object of first person
-yuts, plural of subject in the imperative
-is, hortatory(?) imperative
-se, -s, added to first word in sentence, interrogative
-na, adverbial numerals
-huas, ordinal numerals
-si, distributive numerals

TEXTS.

LORD'S PRAYERS.

Two Lord's Prayers in Costanoan have long been known.[10] A partial translation can be made. It may be added that the text given by de Mofras from Santa Clara appears rather to resemble the San Juan Bautista dialect; and that his other, which is presented as from the Tulare Valley, in other words Yokuts, is possibly most similar to the dialects of San Jose and Santa Clara.

VALLÉE DE LOS TULARES.

Appa macquen erinigmo tasunimac emracat, jinnin eccey macquen unisínmac macquen quitti éné soteyma erinigmo: sumimac macquen hamjamú jinnan guara ayei: sunnun macquen quit ti enesunumac ayacma: aquectsem unisimtac nininti equetmini: juriná macquen equetmini em men.

[10] Duflot de Mofras, II, 392.

TRANSCRIPTION.

apa	maken	erinix-mo[1]	tasuni-mak[2]	em[3]
Father	our	sky-in,	(sacred)	thy
rakat[4]	xinin[5]	eksei	maken	unisin-mak[6]
name,	(come)	(rule)	us	will
maken	kitiene	sotei-ma	erinix-mo	sumi-mak[7]
us	as	(earth)-in	sky-in,	give
maken	hamxamu[8]	xinan	wara ayei	sunu-n[7]
us	food		debts	forgive
maken	kitiene	sunu-mak[7]	aya-kma[9]	ake-ktsem[10]
us	as	forgive	debtors,	not
unisimtak[11]	nininti	eket-mini[12]	xurina	maken
(lead)		bad,	(deliver)	us
eket-mini	emen			
bad,	amen			

NOTES.

1. Compare San Jose rini-mu, up. For the locative ending compare San Jose -mo, -mu, -m, and San Juan Bautista -me, at the house of; also, below, sotei-ma, on earth.

2. The ending -mak occurs on several of the forms that are imperative or optative:

tasuni-mak, hallowed be.
unisin-mak, thy will be done.
sumi-mak, give us.
sunu-mak, as we forgive, or, forgive us.

3. Compare im rakat in the Santa Clara prayer. Compare also San Jose em ama, are you eating? where em replaces mene, you

4. Compare San Juan Bautista "gracat."

5. Compare Monterey xin, to walk.

6. Unisin- perhaps contains the same stem as Monterey iws, ius, to like, desire.

7. Sunu-n and sunu-mak, forgive, are not the same as sumi-mak, give, through a manuscript misreading of nu for mi; but sunu recalls Coast Miwok suli, pardon, pity, while sumi is paralleled by San Juan Bautista xumi, give.

8. Compare San Jose and San Juan Bautista ama, to eat, Monterey amxai, food.

9. Contains the common Costanoan plural ending -kma, -mak, -ma, usually confined to animate nouns.

10. The negative is akwe in San Jose, kwe, kue, at Monterey, ekwe at San Juan Bautista, etc.

11. The ending agrees with the locative case-suffix -tka, -tak, which appears to be common to all Costanoan dialects, but is of course used only with nouns. The word may be corrupt. Except for a difference of two letters, it is identical with unisin-mak above. Possibly -tak should be read -mak.

12. In San Juan Bautista ekwe is no, not, ekwet·, bad, evil. The adjective ending -mini, -min is known from San Juan Bautista, Santa Cruz, Santa Clara, and San Francisco.

MISSION SANTA CLARA.

Appa macréne mé saura saraahtiga elecpuhmen imragat, sacan macréne mensaraah assueiy nouman ourun macari pireca numa ban saraathtiga poluma macréne souhaii naltis anat macréne neéna, ia annanit macréne nieena, ia annanit macréne macrec équetr maccari noumabaú macre annan, nou maroté jassemper macréne in eckoué tamouniri innam tattahné, icatrarca oniet macréne equets naccaritkoun och á Jésus.

TRANSCRIPTION.

apa	makrene	me	saura[1]	sarax-tka	
Father	our	thou	art	sky-in,	
elekpux-men[2]	im	rakat	sakan	makrene	men
(sacred)	thy	name,	come	to us	thy
sarax	asuei	numan[3]	urun	makari	pire-ka[4]
rule (=sky),		which			earth-on
numaban	sarax-tka	poluma[5]	makrene	souhai	
as	sky-in,	bread	our		
naltis	ana-t[6]	makrene[7]	nena	ya	ana-nit
	give-thou-us	us,			forgive-thou-us
makrene	makrek	ekwet·[8]	makari	numaban	
us	our	evils	(we)	as	
makre	ana-n	nu[9]	marote[10]	xasemper	makrene
	forgive	those	who	(injure)	us,
in	ekwe	tamuniri	inam	tataxne	ikat·arka
	not				
onie-t	makrene	ekwet·	nakaritkun	otc	a
deliver-thou-us	us	evil,			to
Jesus					
Jesus					

NOTES.

1. San Juan Bautista tsahora = tsaura, to exist, be locally, used with animate nouns; Monterey tcawar.

2. -men seems to be the suffix -min, -mini.

3. San Juan Bautista numan, who, which, that, ille qui, relative, not interrogative. The same stem appears in numaban, as, below.

4. For San Juan Bautista regular pire-tka.

5. Monterey, pulum, acorn-bread.

6. As in the preceding prayer, the words give (bread) and forgive (sins) are similar. Give, in San Juan Bautista, is ara or xumi, here ana. The San Juan ending for the imperative of the second person with object of the first, is -t, -mit, -tit; compare ana-nit and onie-t below.

7. The repetition in the printed text of the four words beginning with macrene is a copyist's error.

8. See the preceding text for a note on the use of this stem with the meanings of not and bad in San Juan Bautista.

9. Monterey and San Juan Bautista nu-pe, that, those, San Jose nu-xu, there.

10. San Jose mat·o, who. San Juan has ate for who, and Monterey amp. Compare however the stem rote, to be somewhere, in these two dialects: Monterey anrot, where is it?

MONTEREY. ORIGIN OF THE WORLD.[11]

tan	murka'tuyi[12]	pi'ri	ne'ku	u'uwin	ci'irx
When	finished	world,	then	flew	eagle,
u'mun	tat·ikima'tcan	(Pico Blanco)		ne'ku	xo'p
hummingbird,	coyote	to Pico Blanco.		Then	rose
huya	tci'pil	ne'ku[13]	wa'atsii	wasyi'lum	huya
where	mountain.	Then	ocean	approached	where
wa	ko'ro	ne'ku	ta'nai	wa'tin	u'mun	ne'ku
their	feet.	Now	then	went	hummingbird.	Then
wa'tiyi	ne'ku	u'wi	(para la Sierra de Gavilan)			
went.	Then	flew	to the Sierra de Gavilan.			
Ne'ku	tso'rekoi	pi'ri	Ne'ku	wa'c	kaii	kap
Now	dry	world.	Then	him	told	
si'irx	ne'ku	wac	o'k	ta't·ikima'tcan	es-wa'ti
eagle.	now	him	he-sent	coyote:	"Go
a'yewuc	wi'num	i'nta	muc-ro'ti	ne'ku	ta'nai
look	below.	What	is-there?"	Now	then
was	co'o	i'nta	muc-ro'ti	ne'ku	wa't
him	asked:	"What	is-there?"	Then	went
ma'tcan	ne'ku	wac	ka'ii	ok	ci'irx	e'xe
coyote.	Then	him	told	sent	eagle:	"Many
ama	lakiuni	e'xe	ma'tcan	a'iiwis	ro'tei[14]
people	are-dead,	many."	Coyote	had-looked	there.
tconmestawaa'n	wa's	xi's	i'nix	ti'ius
"May your mother die!"	For-her	he-made	road	of-flowers.
ku	kac	mu'ic	ti'us	ne'ku	u'uwin[15]	ne'ku
"Not	me	please	flowers."	Then	fled.	Then
u'uwin	lu'pup	huya	wi'is	ne'ku	wa'at
ran	dived	where	sand.	Then	came

[11] By the author. For a free translation see present series IV, 199, 200, 1907.

[12] Began?

[13] Followed, as recorded, by ka u'uwin, I flew, fled, ran.

[14] The passage given in present series II, 79, 1904, follows here.

[15] Into the waves; the native word had been forgotten.

tat·iki-ma'tcan ka' pri-ki wi'yuc ara wa'ti
Coyote. "I seized sand. Now went

ka xa'wan
my wife."

ku ka i'usen me xa'wesp a'ntus
"Not I wish you to-marry other

la'tciamk ku ka tu'man e'xe i'swin
women." "Not I can many sons

a'xelust mak tci'iya ka i'usen a'ntus
alone we here. I wish other

la'tciank isko mak e'xe pi'na ca la'tciamk
women that we be-many." This the woman:

o't· ne'ku a't·ap xa'wisp ne'ku tu'mai
"Go!" Then again married. Then could.

an ku ka ru'k xalei's ne'ku u'ti ka'i
"Where will-be my house?" Five. Then they said:

ne'ku mak e'xe ne'ku u'ti(s) xi'si ru'k
'Now we are-many." Then they made houses

u'kc'a' ne'ku (w)as a'ra la'wan te'ps
everywhere. Then him gave bow, arrow,

isku ni'miy we'ren isku u'ti a'mxai
to kill rabbit that they might-eat.

ne'ku me xi's te'uwin isku me a'mxai
"Now you make acorn-mush that you food

mu'tut xi's pu'lum isku me mu'tut to't·
may-eat. Make acorn-bread that you may-eat meat.

o't· wa'tin kau-tak tci'ikas isko me mu't
Go, go to-beach, gather that you may-eat

te'uwen-um ru't e'sxen isko me mu'tut
with-acorn-mush, gather sea-weed that you may-eat.

hi's pu'lum isku me a'mxai i'mat· tu'men
Make acorn-bread that you may-eat. When low-tide,

kue tu'man ni'mi we'ren ne'ku me wa'tin
not can kill rabbits, then you go,

imano tu'men ne'ku me tci'iks a''ulun[16]
when low-tide, then you gather abalones,

xa'kau isku me a'mxai me pu'lum imate
clams, that you eat-with your acorn-bread. When

tco'tcon ru't tca'tc isku me mu'tut ku
can-get-nothing, pick buckeyes that you may-eat." "Not

[16] Spanish.

ka	i'usen	ka'k	te'win[17]	ne'ku	mama'kam	
I	wish,	bitter-is	acorn-mush."	"Now	ye	
ne'neix	isko	mam	a'mxai	a'ru	ka	mas
search	that	ye	may-eat.	Already	I	you
e'nwen	isku	mam	ru't	isku	mam	a'mxai
taught	that	ye	may-gather,	that	ye	may-eat.
a'ra	ka	mas	ni'pia-ki	cina	mi'cix	isku
Already	I	you	have-taught	what	is-good,	that
mam	ru't	isku	mam	a'mxai	ka	mamas
ye	may-gather,	that	ye	may-eat.	I	you
xu'ri	a'ra	makam	u'rse-ki	ru't-at·	e'xe	
leave,	already	ye	have-learned.	Gather	many,	
imatc	i'nam	isku	mam	ku	la'kun	
when	rain	that	ye	not	die	
i'itak-um	ar	ka	e'ucaii	ku	ka	tu'man
with-hunger.	Now	I	am-old,	not	I	can
xin	wa'ra	ka'nise	ka	wa'tin	ar	ka
walk,	alas	me!	I	go,	now	I
e'uwcon	ku	ka	tu'man	xi'n	ru't	xu'nosyin
am-old,	not	I	can	walk.	Gather	wild-oats
isku	me	xi's	ku'rk	li'u	me	ci''win
that	you	may-make	meal,	carry	your	carrying-basket
ne'ku	me	ru't				
that	you	may-gather."				

MONTEREY SONGS.[18]

19(1).[19] A dance song:

uxar-at kai pire, on-cliff dancing (of-the-)world

19(2). A dance song:[20]

panantonakoi, jealous
urin puncipin tot·nin, ... deer

20(1). Song of a blind man:[21]

piina watena tot·i, there goes meat

[17] The people complain that the acorns are bitter. Coyote replies to leach them, but the informant had forgotten the native word.

[18] For a song from a coyote myth, see present series IV, 202, 1907.

[19] Numbers refer to catalogued phonograph records in the Anthropological Museum of the University.

[20] A woman sees a successful hunter with the deer he has killed, and although he is already married, she wishes him for a husband. Deer is tot·.

[21] Played by him on his flute. A girl was attracted, came to him, and became his wife.

20(²). Dancing song:
comak kaenep lupaki[22]

21(¹). A woman's love song:
hayeno, come!
ha-me ka rut·ano, you I mean,
ha-purps tcokolate, hat chocolate-colored.[23]

25(³). Song:[24]
ara patcaxtiyee xawan, now hits wife
was yeyexem, her pelican

Hunting song:[25]
kuniixt wa-wuus wat isxeno, stopped its-nose . . .
(with-)estafiate-plant

16(²). Dance song.[26]
ka istun xaluyaxe, I dream jump
ka mas ictunine, I you dream-of
werenakai, rabbit
tceicakai, jackrabbit
eksenakai, quail

RELATIONSHIP OF MIWOK AND COSTANOAN.

In 1856 Latham[27] tentatively separated certain of the dialects subsequently classified as Costanoan and Miwok. In the earliest linguistic map of California, in Powers' Tribes of California in 1877, Powell still grouped together as Mutsun the languages then known. Fourteen years later, however, in his Indian Linguistic Families, Powell divided the same dialects into two families, which he designated Moquelumnan and Costanoan. This separation has been generally accepted, though only with reserve on the part of some students, inasmuch as there are several obvious lexical resemblances between the two groups of languages, as in the words for two, I, and you.

---

[22] The words, which were given by the informant as mak enep lupak, which perhaps coincides with their usual spoken form, are said to refer to a woman's white face-paint.

[23] The words are given as sung. When spoken, hame ka rut·ano would be mec ka rut·in or me ka rut·. Hayeno may mean to come—compare the vocabulary,—but sounds like a meaningless refrain.

[24] A charm to bring a man home. Fog was away, and to cause him to return he was told that the pelican was beating his wife.

[25] The hunter sings this in order that the deer's nostrils may be unable to smell him.

[26] Sung by the rat to the three animals mentioned, who danced. The ending -akai seems to be expletive.

[27] Trans. Philol. Soc. London, 81, 1856.

Since the structure of the Miwok dialects has recently begun to be ascertained, and as Dr. Barrett's studies have systematized our lexical knowledge of them, more reliable comparisons than heretofore are now possible with Costanoan.

Some fifty resemblances have been determined between Miwok and Costanoan, these being in part lexical and in part grammatical. As the number of stem-words available for comparison is less than two hundred in each family, and as the structure of neither is very thoroughly known, this series of similarities is fairly significant.

	Miwok	*Costanoan*
I	kanni	kan, kana
thou	mi, mi-nü-ñ[28]	men, mene
we	masi, mako	maken, makse
ye	miko, moko	makam
this	ne-, ni-	ne-
that	no-	nu-
who	mana, manti	mat·o
where	mini	mani, am
what	hiti, hinti, tinü	hint·o, inta, intsis
objective	-i, -tc, -t·	-se, -c, -ne, -e
instrumental	-su	-sum, -um, -eyum
locative	-m, -mo	-me, -mo, -m
locative	-to	-tka, -tak, -ta
plural	-ko, -k	-kma, -mak, -kam
plural verb[29]	-ti	-s-
plural imperative	-tc	-yuts
reflexive	-po	-pu
preterite	-ce, -caka, *etc.*	-s, -skun, *etc.*
not	ket, ken	ekwe, akwe
noun-ending	-s	-s
water	kik	si
teeth	küt	sit
liver	kula	sire
nose	huk	us
arm, hand	eku, uku, tisso	icu
bow	kono, soloku, tanuka	conok, tanuka
drink	ucu	ukis
thunder	talawa	tura
father	apa, api	apa
mother	unu, uta	ana
man	tai, tayis, cawe	tares

[28] Possessive.

[29] Recorded in Southern Sierra Miwok and San Juan Bautista Costanoan only.

	Miwok	*Costanoan*
two	oti-ko, oyo-ko, osa	utin, utsxin
sleep	etc	et·e-n
leg, foot	kolo, koyo, ko	koro
foot	hate	hata
neck	lola, heleki	ranai
smoke	kal	kar
sky, up	lile	rini
pity, forgive	suli	sunu
people	miwo-k	muwe-kma
head	molu, tolo	mot·il
five	masoka	micur
earth	wea, woi, wali	warep
arrow	cuta	huti
ash	sike, yuli	yuki
ear	tokosu, tolko	tuksus
tongue	letip, nepit	lase
nail	ti, sala	tur
moon	kome	korme
sun	hi, hiema	hicmen, icmen
turtle	awanata	aunic-min
eye	sut, suntu, huntu	hin, xin
lightning	walapho	wilep, wilpe
white	pas-as-, pakis	paxel-, palkas-
black	mulu-	mur-tuc-
small	kuci	kucue-, kutcu-
many, they	uti	uti

The greatest obstacle to a final answer to the problem as to whether or not this material is sufficient to establish kinship between the two groups, is the difficulty of making a distinction between elements that one language has borrowed from the other, and those that they hold in common as the heirloom of original unity. As Dr. R. B. Dixon has said,[30] when confronted by a similar problem between Chimariko and Shasta, the general status and extent of borrowing between the *unrelated* families in California must be better understood before even a considerable body of similar words can be either accepted or rejected as positive evidence of relationship. It is obvious that words have been transmitted in many directions, but it is not known how extensive the process has been.[31]

[30] Present series, V, 337, 1910.

[31] A somewhat similar case is provided by a series of similarities between Yokuts and Maidu, in which the terms of cardinal direction, the numerals from one to three, and the words for head, mouth, breast, person, sun, dance, and probably others, are almost alike. These resemblances may be due to borrowing, particularly if any considerable proportion of them prove to extend to other families.

In favor of relationship is the equivalence of k and s in a number of words, and l and r, or l and n, in others. On the other hand even such correspondences are of course not proof of kinship, as a language lacking r or a certain type of k might well alter these sounds to l and s in borrowing words from another stock of speech.

Probably the strongest evidence in favor of kinship is furnished by the grammatical elements enumerated, and by the general structural resemblance between the two groups of languages. They agree in possessing a closely similar phonetic basis; a prohibition of combinations of consonants in stems, or initially in words; a paucity of reduplication; a similar number and kind of suffixes of case and number in nouns and pronouns; the complete absence, so far as known, of instrumental, spatial, and adverbial affixes from verbs; and a general lack of prefixes.

The most important difference between the languages is in the grammatical usage of the pronominal elements. Costanoan is almost entirely analytic in this regard, while the majority of Miwok dialects are elaborately synthetic, both in noun and verb. What is more, the affixed pronominal forms of Miwok are for the most part entirely different from the independent pronouns that are common to Miwok and Costanoan. But the gap is bridged by the coast dialects of Miwok, which lack nearly all the synthetic pronominal series that are so conspicuous in the interior dialects, and affix the pronominal elements so loosely that they are more properly proclitics, as in Costanoan. If Miwok and Costanoan constitute but one family, the interior Miwok languages therefore probably represent a more primitive stage of synthetic structure, which has already largely broken down in the coast Miwok dialects, and has been replaced by an almost entirely analytic one in Costanoan.

A definite answer as to the genetic relationship of the two groups can therefore perhaps not yet be given, though the evidence will probably make a favorable rather than a negative impression. The most appropriate designation for the new and larger family, if it be recognized as a true unit, appears to be Miwok, which alone, of the names already in usage, is a native term denoting human beings. Mutsun and Moquelumnan

signify specific localities, and Costanoan labors under the double disadvantage of being Spanish—corrupted at that—and of geographic inappropriateness for a group extending to the Sierra Nevada.

In any event, even if the fact of a larger family is accepted, the Miwok and Costanoan groups must continue to be regarded as the primary divisions of this family. The most diverse Miwok dialects appear to be more similar to one another lexically than to any Costanoan idiom, and vice versa. This circumstance should have historical bearing because the Costanoan territory is on the whole situated between the coast and interior Miwok divisions.

CHUMASH.

DIALECTS AND TERRITORY.

The Chumash languages are more difficult than the Costanoan, and it is less feasible in this family to reconstruct forms given in an imperfect or inconsistent orthography. Five missions were founded in Chumash territory: San Buenaventura, Santa Barbara, Santa Ynez, La Purisima, and San Luis Obispo, the first two being on the coast, the three western ones a short distance inland. Data are available on the dialects of all of these missions except La Purisima. In addition there were the dialects of the northern Santa Barbara islands (represented by a vocabulary from Santa Cruz), which not only were Chumash but have given this name to the family. The islanders received no missions of their own, but were brought to the mainland.

The known Chumash dialects fall clearly into three divisions. One group comprises the district of San Luis Obispo. Another embraces the islands, so far as these were Chumash and not Shoshonean. All the remaining territory within the limits of the family was included in what may be called the principal or central group. Within this division San Buenaventura, Santa Barbara, and Santa Ynez show variation. Other dialects[32] very likely existed also, but have not been recorded. The Santa Barbara idiom is more similar to Santa Ynez than to San Buenaventura; where one of the three differs from the other, San Buenaventura is exceptional three times out of four. The island dialect, assuming it to have been comparatively uniform, so that the Santa Cruz material may be taken as representative of all the islands, shows no special affinity to any one of the dialects of the Central division. The same seems true of San Luis Obispo, but this idiom would seem to be more specialized than the island dialect. Graphically the relations may be represented thus:

S Y
S Ba
S L O — Id
S Bv

[32] See, for instance, present series, IV, 138, 1907.

COMPARATIVE VOCABULARIES.

The table is derived from the following sources: San Luis Obispo, Hale;[33] Santa Ynez, the author and Taylor;[34] Santa Barbara, Hale,[33] Loew,[35] and Portola;[36] San Buenaventura, the author; Santa Cruz Island, Timmeno.[37]

English	*San Luis Obispo*	*Santa Ynez*	*Santa Barbara*	*S. Buenaventura*	*Santa Cruz Id.*
Person			ku	ku	
Man	Lmono	uγuiγ	oxoix	ataxat[1]	alamün
Woman	tsiyuL·	eneq	eneq	Xanwa[2]	hemutc
Child		teitci	tupnektc	gunup	kuteo
Old man		anaxo	pakowac	paküwas	
Old woman		anaqatcan	eneXewac	Xanwawan	
Father	sapi	qoqo	qoqo		seske
Mother	tuyu	tuq	xoni		osloe
Head, hair	co	oqwon, nokc	oqwon, nokc	oqwom	pulawa
Forehead		iksie	ixsi		igtee
Ear	ta	tou, tu	tu	tum	tu
Eye		tuX, töX	tugu	tök	
Nose		noX	noXc	noXc	tono
Mouth		ök	uk	ök	aotc
Tongue		eleu	eleu	eleu	eloe
Tooth		sa	sa	sa	sa
Beard		atsüs	atsus	atsös	atses
Neck		ni	ni	aklü	kelik
Arm, hand	pu	pu	pu	po	pu
Nail		eqwai	eXwae	iqwai	eqwai
Body		amun	amun		alapamai
Breast			qoax	qöu	
Woman's breast		kutet	kutet		
Belly, back		akeu	akcewe	qöp	atckuac
Leg, foot		uL, tem	uL, tem	öL	nimel
Bone		se	se		ikukuie
Blood		aXulis	aXulis	an	aXyulic
Penis		Xot		xöt	
Vagina		tili		tilin	
Chief		wotca	wot, nokc		wota

[33] Trans. Am. Ethn. Soc., II, 126, 1848, from Coulter, in Journ. Roy. Geogr. Soc. London.

[34] California Farmer, XIII, 82, May 4, 1860, republished in Powers, Tribes of California, *op. cit.* 561.

[35] Collected by O. Loew, published by A. S. Gatschet, in F. W. Putnam, Wheeler Survey, VII, 424, 1879.

[36] Given in Powers, *loc. cit.*

[37] Published by Taylor, *loc. cit.*, republished in Powers, *loc. cit.*

English	*San Luis Obispo*	*Santa Ynez*	*Santa Barbara*	*S. Buenaventura*	*Santa Cruz Id.*
Friend	axsi	antük	anteg		oxken
House		ap, mam	ap	ap	p-awayic
Bow	t-axa	ax	ax	ax	twopau
Arrow	lewi	ya	ya		aihuc
Knife		uwu	owa	öu, öa	ewu
Boat		tomolo	tomol		tomolo
Moccasin			ekenemo		iteenmu
Tobacco		coX	co		
Sky	tixis	alapa	alapa	halaepai	nawoni
Sun	smaps	alaca, qsi	alica	icau	tanum
Moon	tawa	awai	awai	axwai	owai
Star	k-cihimu	aqiwo	aqewu	aqiwo	aklike
Night	te-xime	asaXei	sulkux		oxemai
Wind		saXtakut, saXwet	saXkut		kacoklo
Thunder		soXqon	soXqo		ooxqon (*sic*)
Lightning		ma-etüX-a-soXqon	s-kuntawa		s-kunto
Rain		tuhui	tuhui	tuhuye	
Snow		oqtauqo	kalum	poi	
Fire		nü	nu	nö	ne
Smoke		tox		ito	
Water	t-o	o, oa	o	o	mihi
Sand		Xas		qas	
Earth		cup	cuxp	cupcup	-sup
Ocean	te-nexan	s-Xami	s-Xami		nutewo
Stream	te-limi	teyeX	texeX	ma	ulam
Lake		ük	ükek	simuwu	
Valley			s-tauayik		s-tauahik
Mountain	tspu	tüp, uclomon	oclomol, tuptup	tcou	ciletupun
Stone	t-Xöp	Xöp	Xöp	Xöp	wa
Salt	tepu	tipi	tipi	tip	topai
Wood, tree		pon	pon	pon	pon
Leaf		kapi	kap		kapa
"Pine"		tak	tomoL[3]		tomol[3]
Meat		kani, somut	saman		comun
Dog		hutcu, qo	tsun	e-töniwa	wutcu
Coyote		XoXau		alaxüwül	
Bear		xus	xus		yus
Fox		knuix	knuex		knix
Deer		wu		wö	
Jackrabbit		ma		ma	
Rabbit		qun	qun	timeu	
Ground squirrel		emet		pistuk	
Eagle		slo		tslo	
Goose		wawa	wawax		
Duck		olwackola	olxwockoloix		
Turtle		caq	caqa		teke
Rattlesnake		xcap	xcap	xcap	

English	*San Luis Obispo*	*Santa Ynez*	*Santa Barbara*	*S. Buenaventura*	*Santa Cruz Id.*
Snake		pcoc, yox[4]	tsokoix		pcoc
Fish		alimu	alimu		layec
Fly		aXumpes	aXlpes		ulupuk
Name			tu		te
White		owox	owox	owo	pupu
Black		coyi	axima	cocoi	astepin
Red		tasun	tasen	ukstai	
Large		noxoac	XaX	XaX	inu
Good		tcoho, cuma	cuma, tcoo	wacöt	yaya
Bad	ts-owis	aXümuik	aXpan	muctcum	anaisnems
Dead		akcan	kcan		kopok
I		noi	noo	no	noo
You		pii	pii	pi	pii
We		kiku	kiku	ki-	mitci (*sic*)
This		kai, kia	kai, ite, he	kaki	tuyu (*sic*)
That		qolo	ho		itwo (*sic*)
All		yila	yula	yula	tetwoke (*sic*)
Much	ts-exu	wahatc	uhu		talaketc
Who		kune	ayi		tco
To-day		qöpu	qupu-		manti
Yesterday		kactapin	kcapin		pua
Yes		ino	ho, i		yutua
No		pwo	sewilx, amo	museil	anictu
One	tsxumu, tcumu	paka[5]	paka[5]	paket[5]	ismala
Two	ecin	ickom	ickomo	ickom	icteum
Three	mica	masöx	masex	masöx	masex
Four	paksi	ckumu	ckumu	ckumu	ckumu
Five	tiyewi	yitipakas	yitipaka	yitipaket	sitisma
Six	ksuasya, ksukuya	yitickom	yitickomo	yitickom	sitictcum
Seven	ksuamice	yitimasöx	yitimasex	yitimasöx	sitmasex
Eight	ckomo	malawa	malawa	malawa	malawa
Nine	cumotcimaxe, skumotci	tspa	tspa	tspa	spa
Ten	tuyimili	tciya	kelckomo, kecko	kackom	kackum
Eleven	tiwapa	telu	tulu, keilu		telu
Sixteen	peusi		peta		
Eat		acün	alcun	umu	asta
Drink		aqmil	aqmil	aqmil	akmil
Run		aLpat	alpat	oxnei	wiwawi
Sing		eXpetc	eXpetc		xuwatc
Sleep		we	we	ukwe	nayul
See		qoti	qoti		naptil
Kill		siniwe	siniwe	taktö	
Sit		ilikün	leken	hilikö	
Stand		lukumil	nowo	nawo	kakan
Give		ikc	xiks		

NOTES TO VOCABULARIES.

1. Southern California Shoshonean.
2. "Young woman."
3. Compare boat.
4. Yokuts yax, water-snake.
5. Serrano Shoshonean haukup, Esselen pek.

KEY TO THE DIALECT GROUPS.

	Northwestern	*Central*	*Island*
One	tcumu	paha	ismala
Four	paksi	ckumu	ckumu
Eight	ckomo	malawa	malawa
Eleven	tiwapa	telu	telu
Stone	t-Xöp	Xöp	wa
Water	t-o	o	mihi
Bow	t-axa	ax	twopau
Sky	tixis	alapa	nawoni
Father	sapi	qoqo	seske

GRAMMATICAL NOTES.

The brief San Luis Obispo vocabulary shows one consistent peculiarity. All its terms except four or five, besides the numerals and body-part words with possessive prefix, begin with t- or tc-. Thus t-awa, moon, in other dialects awai; t-o, water, as compared with o; ts-limi, stream, versus ulam. Even adjectives are not excluded: ts-owis, bad, ts-exu, much, elsewhere uhu. It would appear that this prefix is a proclitic article, such as ma is in the Santa Ynez dialect.[38] The Salinan language, to which the San Luis Obispo dialect was adjacent, though so far as known unrelated, presents the almost identical circumstance that the majority of nouns commence with t-, tc-, or s-.[39]

The pronominal forms, which are identical whether subjective or possessive, but quite distinct and suffixed instead of prefixed when objective, appear as follows:

[38] Present series of publications, II, 36, 1904.

[39] *Ibid.*, 46.

	S Y	S Ba	S Bv	Id	S L O
1 S	k-	k-		k-	
2 S	p-	p-	p-	p-, pas-, patc-	p-
3 S	s-	s-	ts-	ic-, tca-, tc-	
1 D	kis-		kis-		
2 D	pis-				
3 D	sis-				
1 P	ki-		ki-		
2 P	pi-				
3 P	si-				

The San Buenaventura dual and plural forms occur in kis-iskom, we two, and ki-masöx, we three.

The objective suffixes determined in Santa Ynez are -it, -lit, me, -in, -lin, -win, you, -u, us, and -un, -wun, them. The only parallels are in the prayer below.

A past suffix -wac or -woc is shared at least by Santa Barbara with Santa Ynez.

The plural of nouns is regularly formed by reduplication in Santa Ynez, Santa Barbara, and Santa Cruz Island. The process may be assumed to be characteristic of all dialects of the family.

A noun-forming prefix al- appears in Santa Barbara al-kcan, dead; in San Buenaventura AL-owo, white, AL-cocoi, black, al-ukstai, red, and possibly in alaxüwül, coyote; in Santa Cruz Island ala-pupu, white, alo-kopok, dead; perhaps in la-stepin, black, and al-apamai, body; and in al-amün, man—compare Santa Ynez amun, body. San Luis Obispo LMONO, man, has perhaps the same composition.

A number of Island verbs are given with the prefix na-.

It seems that the Chumash dialects are comparatively uniform in grammar in spite of their considerable lexical divergences.

TEXTS.

Textual material is almost wanting except for a Lord's Prayer given by Duflot de Mofras[40] as in the language of Santa Ynez. This reappears with but slight variations in Ca-

[40] II, 393.

balleria y Collell's History of the City of Santa Barbara,[41] where it is given in connection with notes on the language of Siujtu, Yuctu, or Yuchtu village near that town. Both texts leave much to be desired, showing obvious misreadings and words arbitrarily connected and divided; but a partial translation is possible.

DUFLOT DE MOFRAS.

Dios caquicoco upalequen alapa quiaenicho opte: paquininigug quique eccuet upalacs huatahuc itimisshup caneche alapa. Ulamahu ilahulalisahue. Picsiyug equepe ginsucutaniyug uquiyagmagin canechequique quisagin sucutanagun utiyagmayiyug peuxhoyug quie utic lex ulechop santequiug ilautechop. Amen.

CABALLERIA.

Dios cascoco upalequen Alaipai quia-enicho opte: paquini juch quique etchuet upalag cataug itimi tiup caneche Alaipai. Ulamugo ila ulalisagua piquiyup queupe guinsncuaniyup uqui amsq canequi que quisagiu sucutanajun uti-agmyiup oyup quie uti leg uleyop stequiyup il auteyup. Amen.

TRANSLATION.

Dios	ka-ki-qoqo	up-aleken[1]	alapa	kia	enitco
God	our-father	thou-in	sky,	this	(sacred)
op-te	p-akinini-ug[2]	kike	ekwe		up-alaks
thy-name,	thy-(?)-us	us	,		thy-(will)
watauk	itimi	cup	kanetce	alapa	ulamuhu
(be done)	(on)	earth	as	sky,	
ila-ulalisa-we[3]	p-iksi-ug	qöpe	ginsukutani-ug		
day	thou-give-us	to-day,	forgive-us		
uki-agmag-in	kanetce	kike	ki-sa-ginsukutana-gun[4]		
our-owing-(them?)	as	we	we-forgive-them		
uti-agmai-ug	pöxoy-ug[5]	kie[6]	utik	lex	uletcop
(their?)-owing-us,	(not?)-us				(temptation)
santeki-ug	il-autetcop[3]				
(deliver)-us	from-evil.				

[41] Santa Barbara, 1892.

NOTES.

1. lülükon, in.

2. -ug or -gug appears throughout this text for the first person plural objective. Spanish g is a voiced fricative, and Chumash possesses such a sound in k or q position.

3. Caballeria y Collell gives, for Santa Barbara, a "dative" preposition il, a "genetive" or "ablative" ul. Compare il-auteteop.

4. -sa- is perhaps the future. Compare Gatschet in Wheeler Survey VII, 485, k-caa cuun, I shall eat, ke k-caa cian, I shall not buy.

5. Possibly pwö, not, though ini- is the negative element of verbs.

6. Either kie, for kike, kiku, us, or kia, this.

Caballeria also gives the Acts of Faith, Hope, and Charity.

The late Mr. L. G. Yates included in his valuable paper on Charmstones[42] the words and translation of a Chumash song in the dialect of San Buenaventura:

kayuwawille	lelenimustu	mesipposh	sumusil
I shall tell;	uneasy	heart	charmstone

kateushwen	laliolio	lwennew
I have not	sad	?

Another Chumash song occurs in a Yokuts myth:[43]

kapix, you(?) came
tata, mother's brother
caxcaniwac, you will die (*sic;* probably: have died)
salialama, perhaps refrain, compare laliolio in the last song.

Transmitted March 29, 1910.

---

[42] Ann. Rep. Smiths. Inst. for 1886, 296, 1889.

[43] Present series, IV, 242, 1907. The dialect represented is most likely to be that of the mountains to the north of San Buenaventura. If so, it does not differ greatly from the idiom of San Buenaventura, Santa Barbara, and Santa Ynez. The tradition is localized in Chumash territory, and may be of Chumash origin.

Vol. 8. 1. A Mission Record of the California Indians, from a Manuscript in the Bancroft Library, by A. L. Kroeber. Pp. 1-27. May, 1908 ..... .25
2. The Ethnography of the Cahuilla Indians, by A. L. Kroeber. Pp. 29-68, plates 1-15. July, 1908 ..... .75
3. The Religion of the Luiseño and Diegueño Indians of Southern California, by Constance Goddard Dubois. Pp. 69-186, plates 16-19. June, 1908 ..... 1.25
4. The Culture of the Luiseño Indians, by Philip Stedman Sparkman. Pp. 187-234, plate 20. August, 1908 ..... .50
5. Notes on Shoshonean Dialects of Southern California, by A. L. Kroeber. Pp. 235-269. September, 1909 ..... .35
6. The Religious Practices of the Diegueño Indians, by T. T. Waterman. Pp. 271-358, plates 21-28. March, 1910 ..... .80

Vol. 9. 1. Yana Texts, by Edward Sapir, together with Yana Myths collected by Roland B. Dixon. Pp. 1-235. February, 1910 ..... 2.50
2. The Chumash and Costanoan Languages, by A. L. Kroeber. Pp. 237-271. November, 1910 ..... .35

Volumes now completed:

Volume 1. 1903-1904. 378 pages and 30 plates $4.25
Volume 2. 1904-1907. 393 pages and 21 plates 3.50
Volume 3. 1905. The Morphology of the Hupa Language. 344 pages 3.50
Volume 4. 1906-1907. 374 pages, with 5 tables, 10 plates, and map 3.50
Volume 5. 1907-1910. 384 pages, with 25 plates 3.50
Volume 6. 1908. 400 pages, with 3 maps 3.50
Volume 7. 1907-1910. 441 pages and 50 plates 3.50

GRAECO-ROMAN ARCHAEOLOGY. (Large Octavo.) (Published by the Oxford University Press.)

Vol. 1. The Tebtunis Papyri, Part 1. 1902. Edited by Bernard P. Grenfell, Arthur S. Hunt, and J. Gilbart Smyly. xix + 674 pages, with 9 plates. Price $16.00

Vol. 2. The Tebtunis Papyri, Part 2. 1907. Edited by Bernard P. Grenfell, Arthur S. Hunt, and Edgar J. Goodspeed. xv + 485 pages, with 2 collotype plates and a map 16.00

Vol. 3. The Tebtunis Papyri, Part 3. (In preparation.)

EGYPTIAN ARCHAEOLOGY. (Quarto.)

Vol. 1. The Hearst Medical Papyrus. Edited by G. A. Reisner. Hieratic text in 17 fac-simile plates in collotype, with introduction and vocabulary, pages 48, 1905. (J. C. Hinrichs, Leipzig, 25 marks.)

Vol. 2. Early Dynastic Cemeteries of Naga-ed-Der, Part I, by George A. Reisner. xii + 160 pages, with 80 plates and 211 text figures. 1908. (J. C. Hinrichs, Leipzig, 75 marks.)

Vol. 3. The Early Dynastic Cemeteries at Naga-ed-Der, Part II, by A. C. Mace. xi + 88 pages, with 60 plates and 123 text figures. 1909. (J. C. Hinrichs, Leipzig, 50 marks.)

Vol. 4. The Predynastic Cemetery at Naga-ed-Der. The Anatomical Material, by Elliott Smith. (In preparation.)

Vol. 5. The Cemetery of the Second and Third Dynasties at Naga-ed-Der, by A. C. Mace. (In press.)

Vol. 6. The Cemetery of the Third and Fourth Dynasties at Naga-ed-Der, by G. A. Reisner. (In preparation.)

Vol. 7. The Coptic Cemeteries of Naga-ed-Der, by A. C. Mace. (In preparation.)

SPECIAL VOLUMES.

The Book of the Life of the Ancient Mexicans, containing an account of their rites and superstitions; an anonymous Hispano-American manuscript preserved in the Biblioteca Nazionale Centrale, Florence, Italy. Reproduced in fac-simile, with introduction, translation, and commentary, by Zelia Nuttall.
Part I. Preface, Introduction, and 80 fac-simile plates in colors. 1903.
Part II. Translation and Commentary. (In press.)
Price for the two parts $25.00

Fac-simile of a Map of the City and Valley of Mexico, by Alonzo de Santa Cruz, Cosmographer of Philip II of Spain. Explanatory text by Zelia Nuttall. Map in 7 sheets, 17 × 20 inches. (In preparation.)

The Department of Anthropology, Its History and Plan, 1905. Sent free on application to the Department, or to the University Press.

Note.—The University of California Publications are offered in exchange for the publications of learned societies and institutions, universities and libraries. Complete lists of all the publications of the University will be sent upon request. For sample copies, lists of publications or other information, address the Manager of the University Press, Berkeley, California, U. S. A. All matter sent in exchange should be addressed to The Exchange Department, University Library, Berkeley, California, U. S. A.

ASTRONOMY.—W. W. Campbell, Editor. (Lick Observatory, Mt. Hamilton, Cal.)
Publications of the Lick Observatory.—Volumes I-V, VIII, and X completed. Volumes VII and IX in progress.

BOTANY.—W. A. Setchell, Editor. Price per volume $3.50. Volumes I (pp. 418), II (pp. 354), and III (pp. 400), completed. Volume IV (in progress).

CLASSICAL PHILOLOGY.—Edward B. Clapp, William A. Merrill, Herbert C. Nutting, Editors. Price per volume $2.00. Volume I (pp. 270) completed. Volume II (in progress).

ECONOMICS.—A. C. Miller, Editor.

EDUCATION.—Edited by the Department of Education. Price per volume $2.50.

ENGINEERING.—Edited under the direction of the Engineering Departments. This series will contain contributions from the Colleges of Mechanics, Mining, and Civil Engineering. Volume I (in progress).

GEOLOGY.—Bulletin of the Department of Geology. Andrew C. Lawson, Editor. Price per volume $3.50. Volumes I (pp. 428), II (pp. 450), III (475), and IV (462), completed. Volume V (in progress).

MODERN PHILOLOGY.—Volume I in progress.

PATHOLOGY.—Alonzo Englebert Taylor, Editor. Price per volume, $2.50. Volume I (pp. 347) completed.

PHILOSOPHY.—G. H. Howison, Editor. Volume I (pp. 262), completed. Volume II (in progress). Price per volume $2.00.

PHYSIOLOGY—S. S. Maxwell, Editor. Price per volume $2.00. Volume I (pp. 217) completed. Volume II (pp. 215) completed. Volume III (in progress).

PSYCHOLOGY.—George M. Stratton, Editor. Vol I (in progress).

ZOOLOGY.—W. E. Ritter and C. A. Kofoid, Editors. Price per volume $3.50. Volumes I (pp. 317), II (pp. 382), III (pp. 383), and IV (pp. 400), completed. Volumes V and VI in progress. Commencing with Volume II, this series contains Contributions from the Laboratory of the Marine Biological Association of San Diego.

MEMOIRS OF THE UNIVERSITY OF CALIFORNIA. (Quarto.)

Vol. 1. 1. Triassic Ichthyosauria, with special reference to the American Forms, by John C. Merriam. Pp. 1-196, plates 1-18; 154 text figures. September, 1908 ..... $3.00

2. The Silva of California, by W. L. Jepson. (In press.)

UNIVERSITY OF CALIFORNIA CHRONICLE.—An official record of University life, issued quarterly, edited by a committee of the Faculty. Price, $1.00 per year. Current volume No. XII.

ADMINISTRATIVE BULLETINS OF THE UNIVERSITY OF CALIFORNIA.—Edited by the Recorder of the Faculties. Includes the Register, the President's Report, the Secretary's Report, and other official announcements.

Address all orders or requests for information concerning the above publications to The University Press, Berkeley, California.

European agent for the series in American Archaeology and Ethnology, Classical Philology, Education, Modern Philology, Philosophy, and Semitic Philology, Otto Harrassowitz, Leipzig. For the series in Botany, Geology, Pathology, Physiology, Zoology and also American Archaeology and Ethnology, R. Friedlaender & Sohn, Berlin.